An Abstract

"THE RADIOACTIVE HEMATITE DEPOSITS IN THE VICINITY OF WANG-CH'IEN-TSUNG-LING, LIAO-YANG HSIEN, MUKDEN PROVINCE"

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Mineral deposits containing Niobium and Tantalum were reported in Wang-Ch'ien-Tsung-Ling, which is located in the vicinity of ho-lan-kou in Liao-Yang Hsien, by IKEGAMI Shigeo associated with the Mining Division, Kurayama Showa Steel Works. This area was investigated with the assistance of Ikegami in March 1937. The investigation and research results proved that these minerals were merely a type of hematite, specularite, contained no niobium or tantalum, and economically of no value. This specularite contained a minute quantity of lead, slightly radioactive, its veins intersecting, and because it resembles wolframite, columbite, and other minerals, we decided to analyze it and give the findings in this report.

The earth in the vicinity of Wang-ch'ien-tsung-ling seems to belong to the Sinian System and is composed of sedimentary rock which is traversed by diorites, granite and granodiorite-porphyry. This sedimentary rock indicates an alternation of tuff-mudstone, black shale and limestone. The strata sequence is difficult to determine due to the many strike faults but in general should be sedimentary and columnar, as indicated in the 1/50,000 map.

The tuff-mudstone acts as the mother rock of the brecciated vein while the diorite seems to be directly associated with the deposit formation.

A small scale deposit of mica and granite found exposed in southeast Hsia-ma-tang, is partially granular and light-brown. Its chief components are oligoclase, microline, quartz, biotite and muscovite.

The granodiorite-porphyry deposit found exposed in northern Hsia-ma-tang, runs from east to west, light bluish-gray, minute and aphanitic, and the porphyritic formation is clearly decernible. These granular multi-rock base aphanitic crystals are composed of microline (intermediary feldspar crystals?) which has transformed into silky mica and biotite. The rock base has a micro-granitic texture and its chief components are alkalinic feldspar and quartz with some biotite.

The structure of all these mineral deposits in the above areas are economically of no value.

Chemical analysis of these mineral deposits proved that they were practically pure speculatite and contained very little impurities. However, this analysis was carried out on the mineral deposits only which were hand-picked. Its powdered form more or less melts readily in heated 6N hydrochloric acid and the residue showed some white quartz and/or feldspar. Subsequent analysis of a small amount of this mineral produced the following:

Mineral Vein	Pb	Th	U
No. 5	0.95	trace	trace

This speculatite proved to be radioactive because it contained traces of uranium and thorium, and this is illustrated in the above table. It also contains a comparatively large amount of lead but we completely failed to ascertain in what form the lead exists in the deposits. However, the fact that this lead is not a sulphide is definite.

[Note: Map of Area is available in the original document]

From: "Chishitsu Chosajo Yoho" (Memoirs of the Geological Institute, Manchuria) 1937.

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WORKS OF THE SEISMOLOGICAL INSTITUTE) #124, (CATALOGUE OF DEEP-FOCUS EARTHQUAKES ACCORDING TO THE DATA OF THE SEISMIC NETWORK OF THE USSR, COVERING THE PERIOD 1909-1944), I. A. Lindan, Izd-vo Ak Nauk SSSR, Moscow-Leningrad, 1947, 14 pp, 1 map

This work contains a catalogue of data obtained from processing the data of seismic stations of the USSR for 450 deep-focus (50 to 800 kilometers) earthquakes. Gutenberg and Richter's tables were used to determine the depth of the centrum, the distance from the station to the epicenter, the time at the epicenter, and the coordination of the epicenter from the original seismograms. The catalogue contains only a few earthquakes which occurred far from the seismic stations of the USSR, since only the seismograms of the latter were used in the compilation. Of the 450 earthquakes included, 204, mainly for the period 1909-1917, were not contained in Gutenberg and Richter's catalogue. The map giving the distribution of deep focus earthquakes separates the earthquakes by depth into three groups, i.e., 50 to 140 kilometers, 150 to 340 kilometers, and 350 kilometers and more. The greatest centrum depth calculated was 710 kilometers for the earthquakes of 29 June 1934, whose epicenter was located in the Flores Sea.

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